

Weekly Report

2017.12.18-2017.12.24

1.This Week

Summarization Form

Task	Progress	Time
Power Grid New Projects	Decide the plan and content we're going to do.	February
Power Grid Visualization Survey	Gathering materials.	
VIS 2018 paper	Learning deep learning and make the first try.	4.1

Power Flow Project in Ningbo

1.Decide the content of the project (Convergence Analysis of power flow calculation):

- topology view showing power flow results
- parallel coordinate view showing convergence ratio on different dimensions
- improved parallel bar charts showing convergence step numbers
- stream like view showing values during the convergence process

Discuss with Prof. Zhang Dan about the scheme and his advice is: maybe use 3D visualization methods to show the values during the convergence process.

2.Plan to design details of the project and let Zhang Wei design the interface.

Idea evaluation for VIS 2018 (Event Detection)

1.Discuss with Ma Yuxin about employing deep learning methods to learn patterns in the power grids. Yuxin recommended a deep learning library based on tensorflow and also recommended several models that we might use.

2.There's one question we need to solve and have been confusing me for a whole week: why use the visualization results to run deep learning algorithms instead of using the raw data? what's the advantages of the visualization results (pictures) compared to the raw data.

3.Chen Zexian and me are all learning deep learning concepts and methods this week. He's also learning the deep learning library and now working on labeling the data by predefined fault types in the raw data. Next week we're going to try some simple models.

Visual Analysis for Large-scale power grids

- 1.Partition different granularities of the power grid.
- 2.Work on the local force-directed layout embedded in a global force-directed layout (We have discuss the algorithm and now he's working on it).

Papers (from deep learning session from vast)

- 1.Analyzing the Training Processes of Deep Generative Models
- 2.ActiVis: Visual Exploration of Industry-Scale Deep Neural Network Models
- 3.DeepEyes: Progressive Visual Analytics for Designing Deep Neural Networks

2.TODO

1. other projects of power grid started.
2. VIS 2018 paper idea evaluation.